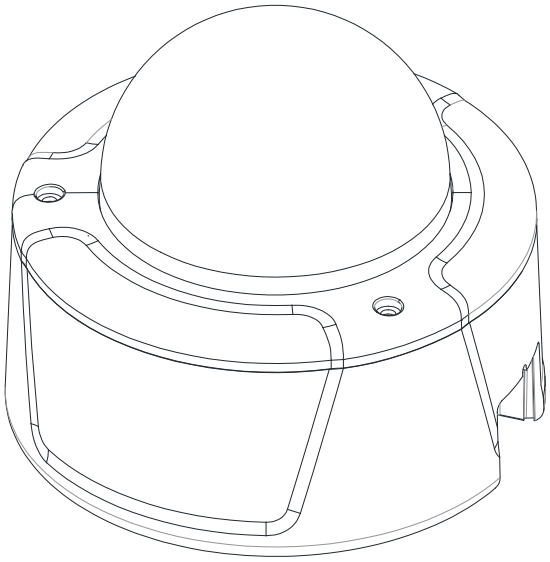
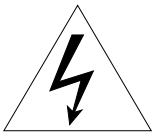


IPX3702HD-5314

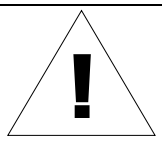
Installation Guide

INFORMATION TO USER

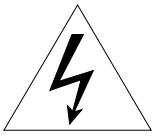


CAUTION

RISK OF ELECTRIC SHOCK,
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
CONTACT QUALIFIED SERVICE PERSONNEL FOR INTERNAL PARTS.



This symbol is intended to alert the user the presence of un-insulated “dangerous voltage” within the product’s enclosure, which may be sufficient magnitude to constitute a electric shock risk to persons.

This symbol is intended to alert the user the presence of important operating and maintenance (servicing) instructions within the guide manual.

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1. FEATURES

Camera

- Full HD outdoor fixed dome IP camera (Vandal proof)
- High quality compression in real time streaming
- 1/2.7” High Quality CMOS Image Sensor
- True Day / Night (ICR)
- Remote Zoom/Focus Control(One Click AF)

Streaming

- Dual streaming mode
- De-interlacing on DSP
- Burnt-in text supported
- Unicast/Multicast supported

Video/Audio

- Video compression: H.264/MJPEG, 25/30FPS@1080p(PAL/NTSC)
- Audio compression: G.711(µLaw, aLaw)/PCM
- Analog video out for external monitors
- Video motion detection supported
- Two-way mono audio supported

Network

- RTSP/ HTTP protocol supported
- 10/100 Base-T Ethernet

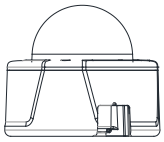
Additional Features

- Micro SD card support
- PoE support
- Built-in Video Content Analysis
- Internal fan/heater
- IP66 certified
- SDK (Software Development Kit) provided

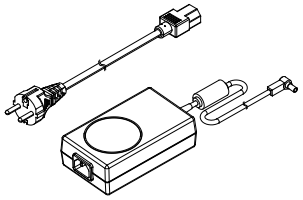
2. PACKAGE CONTENTS

Unpack carefully and handle the equipment with care. The packaging contains:

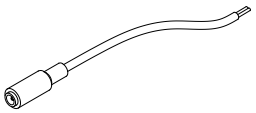
Camera



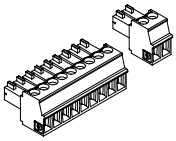
DC power adaptor



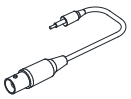
DC jack cable



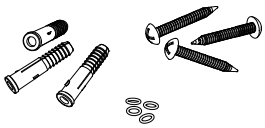
8-pin and 2-pin terminal block



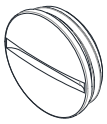
S-Video jack to 3.5mm plug



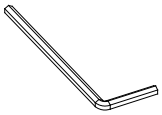
Screws and anchors



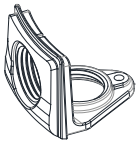
Side plug



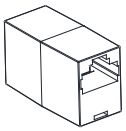
Hex wrench driver



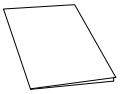
Side cover



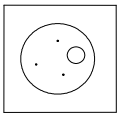
RJ45 coupler



Quick installation guide



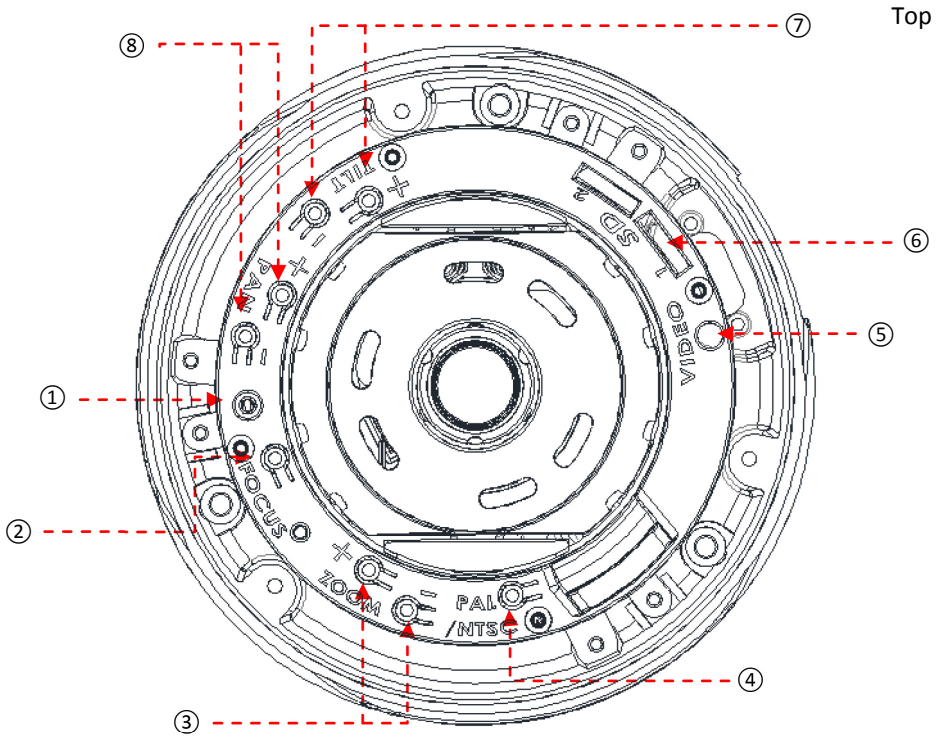
Installation template



Note

The package contents are subject to change without prior notice.

3. PART NAMES



* Models and their appearance are subject to change without any prior notice.

① Rest button
The reset button can be used for restarting the device or resetting it to Factory Default.

② Focus buttons
Use the buttons to manually/automatically determine correct focus.

③ Zoom In/Out buttons
Use the buttons for camera to cover the wide field of view or to concentrate narrow field of view.

④ PAL/NTSC button
Pressing the button cycles through PAL, NTSC, and no video output mode: *No video output -> PAL->NTSC*

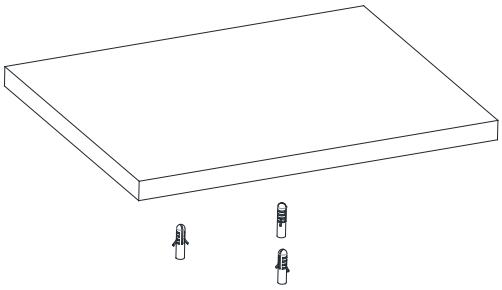
⑤ Video stereo jack connector
Connector for 3.5mm video jack plug.

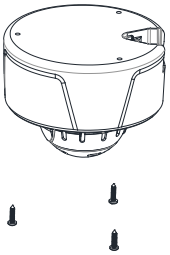
⑥ MicroSD
SD card supports up to 32GB

⑦ Tilt buttons
Use the buttons to control rotation of the lens in a vertical plane.

⑧ Pan buttons
Use the buttons to control rotation of the lens in a horizontal plane.

4. INSTALLATION





1) Place the installation template (paper) that is included in the package on the desired installation surface.

2) Drill three holes in correct positions based on the template paper, and insert anchor blocks into the holes.

3) When placing the camera body to the installation surface, match three alignment holes with three anchor blocks.

4) Tighten the surface anchor studs.

5) Connect all the required cables to the camera.

6) Adjust the lens position. Detailed information can be found in **4.2. Setting the Lens Position**.

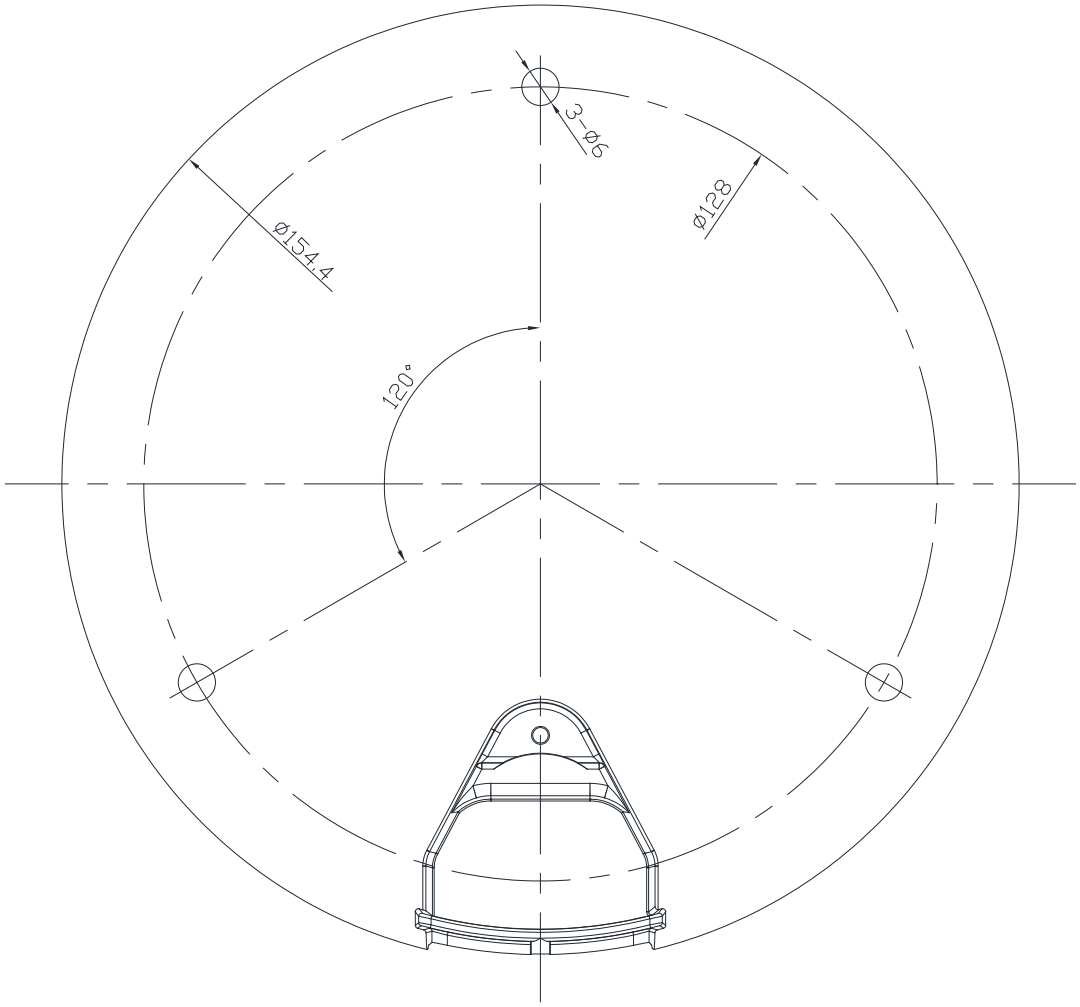
7) Place the dome cover on the main body of the camera. Dome cover has three alignment holes that match camera body's alignment holes.

8) Once properly placed, insert hex screws into the three holes of the body and tighten them up with hex wrench driver.

Caution

To prevent products from damaging, place the camera on stable and non-vibrat ing surfaces. If the stability is in doubt, consult with safety personnel for reinfor cements, and then proceed with the installation.

4.1. Installation Template

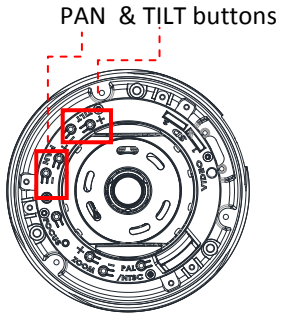


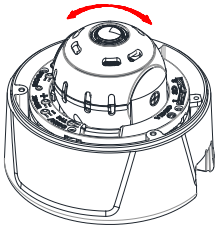
Caution	Installation template image's size scale in this installation guide is not 1:1. The correct-size template design paper can be found inside the package separ ately.

4.2. Setting the Lens Position

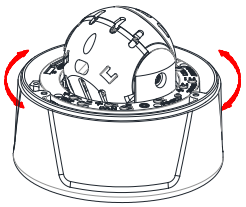
1) Remove the dome cover to control the positioning buttons, or use web site setup (**Setup > Video & Audio >Repositioning)** to adjust the camera.

2) Refer to **3. Part Names** for the button locations; to pan, use '+' and '–'pan buttons. To tilt, use '+' and '-'tilt buttons.





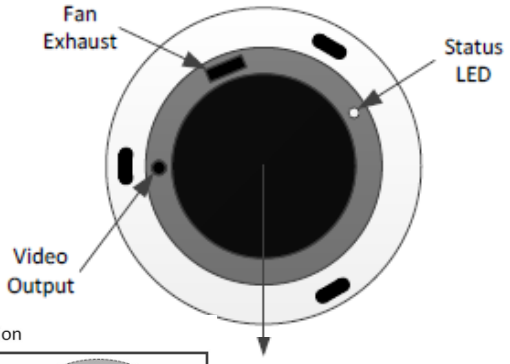
A. Tilt the lens with tilt '+' and '-' buttons

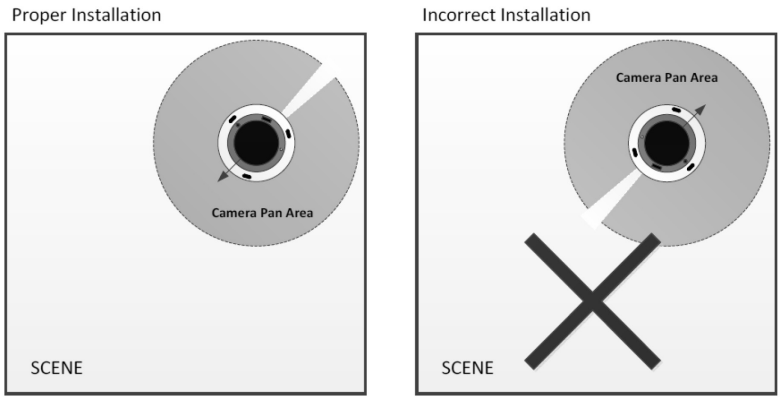


B. Pan the lens with pan '+' and '-' buttons

Even though the camera can pan 360 degrees, the recommended "default" front of the camera housing is described on a right figure.

Please refer to the diagram below for the proper camera housing position and the camera lens:



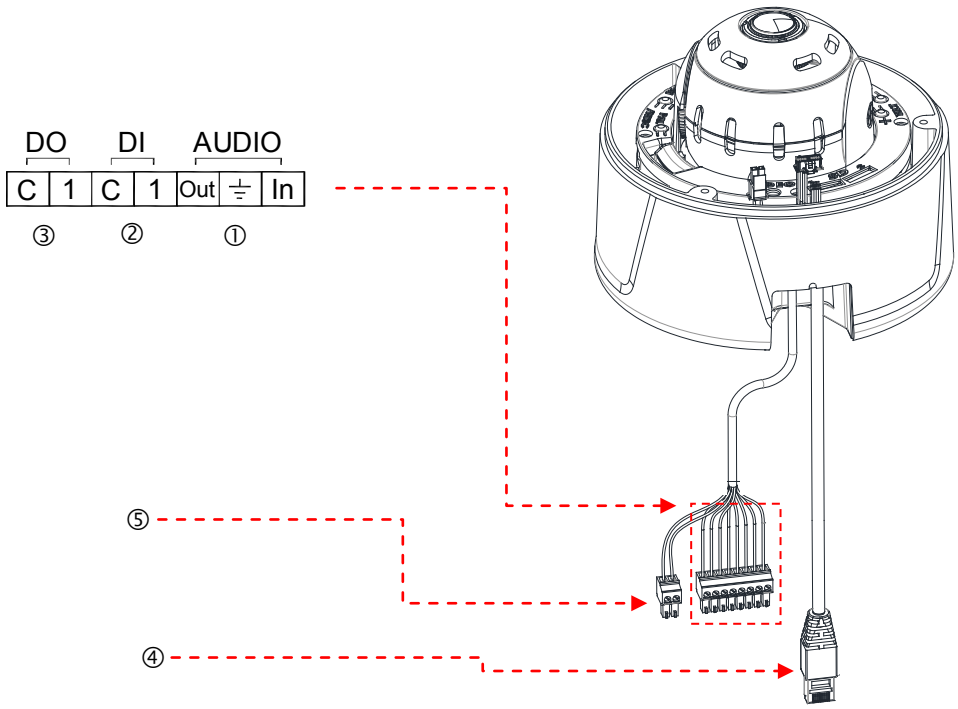


Caution	Lifespan of PAN and TILT are approximately good up to 5,000 counts each.

4.3. Setting the Image Attribute

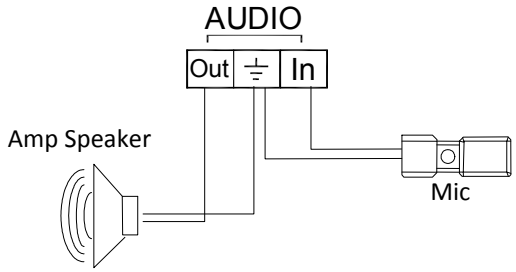
Through the camera's webpage, users can configure image settings.
The camera image's brightness, contrast, saturation and sharpness are adjustable through the image settings. (**Setup > Video & Audio > Camera)**.

5. CONNECTIONS



① Audio input/output

The camera has a mono audio input and a mono audio output. Due to low audio output power, an amplified speaker is recommended for enhanced sound (Do not connect a headphone or earphone directly to the camera).

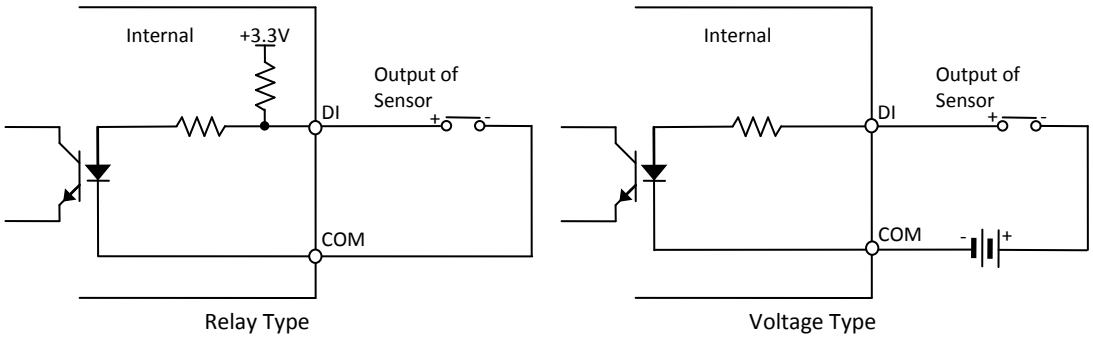


② Sensor (DI) connection

The camera provides 1 channel D/I. It can be connected to either a voltage type sensor or a relay type sensor as the following figures. Settings can be done through the camera's webpage
Input voltage range: 0VDC minimum to 5VDC maximum, Max 50mA
Input voltage threshold: 1.5V

Caution

Do not exceed the maximum input voltage or relay rate.



③ Alarm (DO) connection

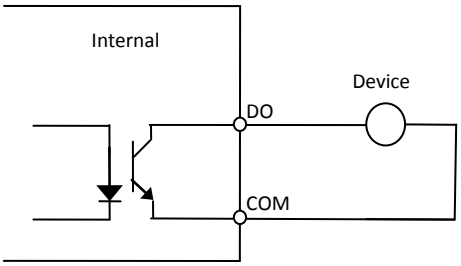
Only the relay type is supported.

Relay Rating: Max 24VDC 50mA

Caution

Do not exceed the maximum relay rating.

Relay Type



Caution

Must connect GND port which is located end of the DO terminal block side.

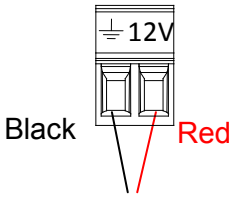
④ LAN connector

This is a 10/100 Base-T Ethernet cable.

Use RJ45 coupler to extend the cable.

⑤ 12V DC Power

A 12 DC power connector is required for this device.



6. CONFIGURATION

6.1.Set up network environment

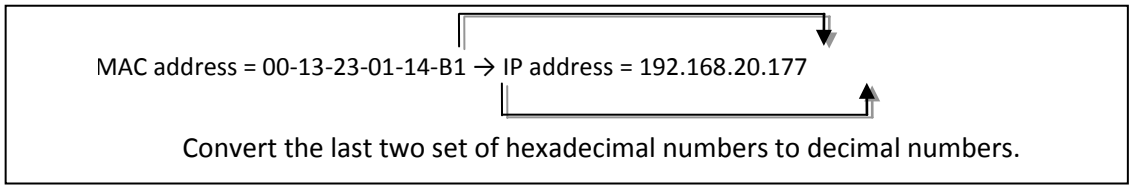
The default IP address of the device is 192.168.XXX.XXX. Users can identify the IP address of the device from converting the MAC address's hexadecimal numbers, which is attached to the device. Be sure that the device and PC are on a same area network before running the installation.

IP address : **192.168.xxx.xxx**
Subnet mask: **255.255.0.0**

6.1.1. Generic IP Environment

In case of generic private network environment where IP address 192.168.XXX.XXX are used, users may view the live streaming images on a web page using the device's default IP address:

1. Convert the device's MAC address to the IP address. Refer to the Hexadecimal-Decimal Conversion Chart at the end of the manual.
   (The MAC address of the device is attached on the side or bottom of the device.)



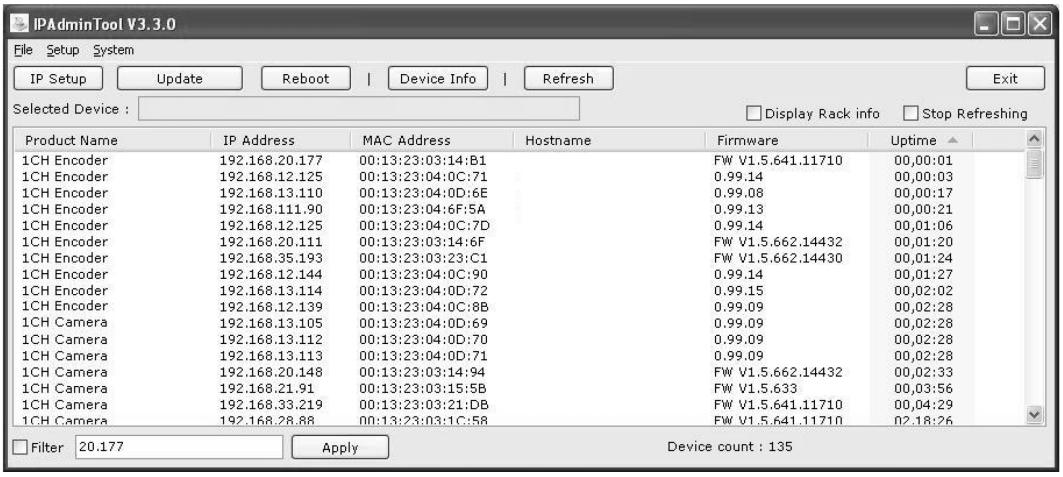
2. Start the Microsoft® Internet Explorer web browser and enter the address of the device.

3. Web streaming and device configurations are supported through ActiveX program. When the ActiveX installation window appears, authorize and install the ActiveX.

6.1.2. Custom IP Environment

IPAdminTool is provided with SDK at the following SDK path.
{SDK root}\BIN\TOOLS\AdminTool\

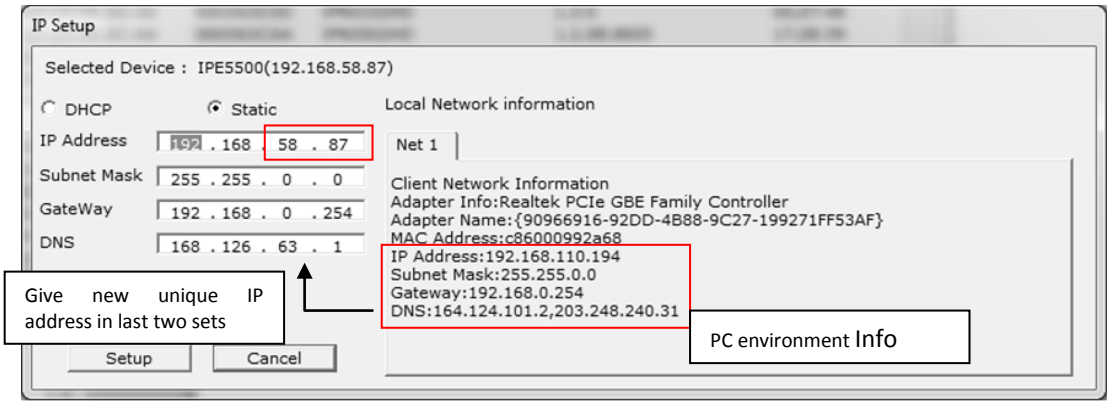
IPAdminTool is a management tool, which automatically scans all of the network products for users to perform administrative tasks, which includes network configurations, firmware update, device reboot, and device organizations.



To modify the device's default IP address for customized network area;

1. Find the device from the IPAdminTool's list and highlight the device's name.

2. Right-click the mouse and select "IP Address"; IP Setup window appears.



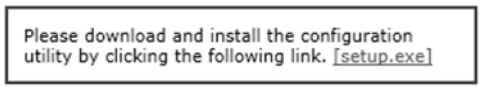
3. In the IP Setup's window, information under 'Local Network information' displays the user/PC's network area information. Those information need to be incorporated to the IP Address, Subnet Mask, Gateway, and DNS boxes, except the last 2 sets of IP Address, which are to be the unique numbers for the device. Refer to the image above for the setting

4. Click 'Setup' to complete the modification.

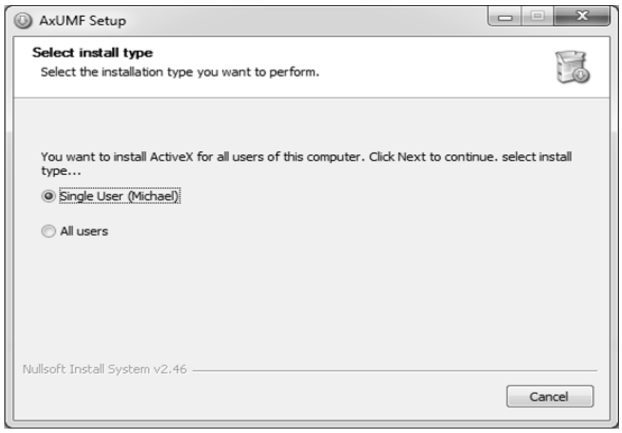
6.2. View video on web page

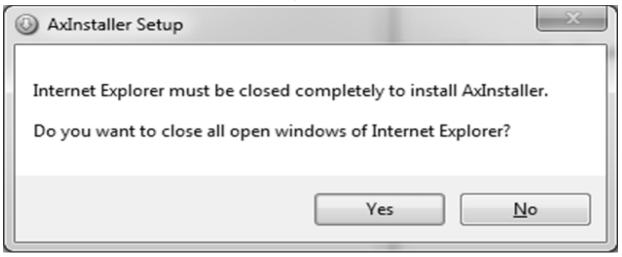
Type the proper IP address to view the live streaming images through a web browser.
The default username and password is *root / pass*.

1. The browser asks to install the ActiveX. Click Allow.



2. Setup.exe installation link or pop-up window appears, depends on Microsoft® Internet Explorer version. Proceed with rest of setup installation.


AxUMF Setup
Select install type
Select the installation type you want to perform.
You want to install ActiveX for all users of this computer. Click Next to continue. select install type...
Single User (Michael)
All users
Nullsoft Install System v2.46
Cancel


AxInstaller Setup
Internet Explorer must be closed completely to install AxInstaller.
Do you want to close all open windows of Internet Explorer?
Yes
No

3. Follow the instructions of the dialog boxes and complete the installation. Once the installation is complete, start the web browser again and check if video stream is displayed in the main view frame.

Caution

If "*This software requires the Microsoft XML Parser V6 or higher. Please download MSXML6 from the Microsoft website to continue. Error code: Cannot create XMLDOMDocument.*" message appears, download and install the Microsoft Core XML Services (MSXML) 6.0.

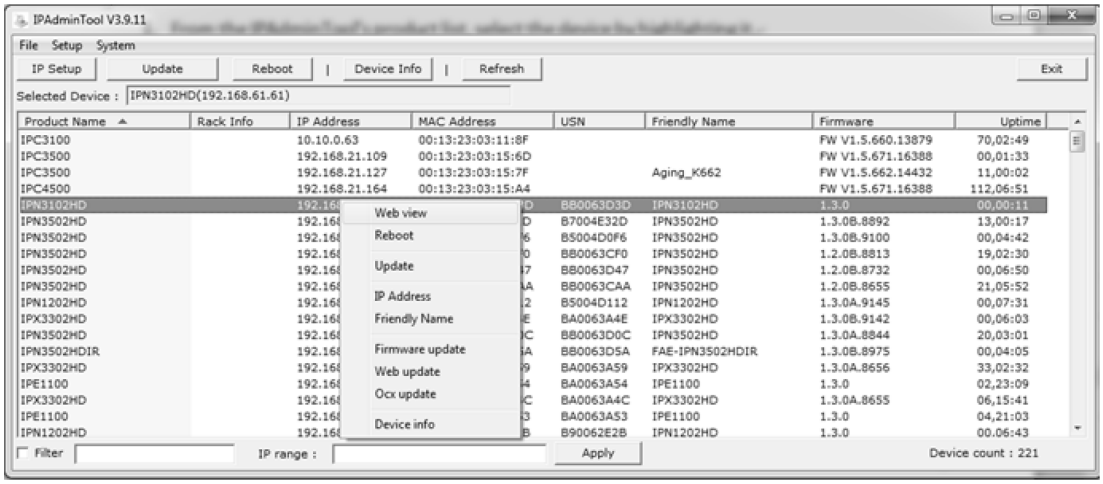
6.2.1. View video using IPAdmin Tool

IPAdminTool automatically searches all activated network encoders and IP cameras and shows the product name, IP address, MAC address and etc. IPAdminTool is provided with SDK at the following SDK path.

{SDK root}\BIN\TOOLS\AdminTool\

1. From the IPAdminTool's product list, select the device by highlighting it.

2. Right-click the mouse and select **Web view**



3. The system's default web browser opens the device's address.

Caution

Whether directly accessing the streaming video through typing IP address on a web page or taking steps through IPAdminTool, the ActiveX is needed to be installed for the Microsoft® Internet Explorer to have the complete configuration privileges.

6.3. Reset

Refer to **3. Part Names** for the reset button location.
Perform the following procedures to reset your device:

1. Push the Reset button and hold for 1~2 seconds. The red led lights up.
2. Wait for the system to reboot.

6.4. Factory Default

Refer to **3. Part Names** for the reset button location.
Resetting the device back to the factory default will initialize all parameters including the IP address back to the factory defaults. To reset back to the factory default;

1. Push reset button and hold for 5 seconds.
2. Release the Reset button when green LED blinks. The red led lights up few seconds later.
3. Wait for the system to reboot.

The factory default settings can be inferred as follows:

IP address:	192.168.xx.yy
Network mask:	255.255.0.0
Gateway:	192.168.0.1
User ID:	root
Password:	pass

APPENDIX (A): SPECIFICATIONS

Summary

Camera Module		
CMOS	Image Sensor	1/2.7” 1080p CMOS
	Effective Pixels	1920x1080
	Scanning system	Progressive scanning
ELECTRICAL	Resolution	1920 x 1080
	Min. Illumination	Color: 0.5 lux, F1.2 BW: 0.001 Lux (B/W, Sens-up 32X)
	AGC Control	Auto
Lens	Focal Length	3.0 ~ 9.0mm
	Aperture Length	Fw1.2 ~ Ft/2.1
	Zoom Ratio	3X
Day & Night		Removal IR Cut Filter
Video		
Compression Format		H.264, MJPEG Selectable per Stream
Number of Streams		Dual Stream, Configurable
Resolution		1920x1080, 1280x720, 800x450, 480x270, 320x180
Compression FPS		Full-frame@1080p
Motion Detection		Built-in
Burnt-in Text (Digital)		Video stream overlay text
Output		Digital video output
Audio		
Input/output		1/1 channel
Compression Format		G.711
Function		
Digital Input/output		1/1 channel
RS-485		Not supported
Network		10/100 Base-T
Power over Ethernet		Supported
Protocol		TCP/IP, UDP/IP, HTTP, RTSP, RTCP, RTP/UDP, RTP/TCP, SNTP, mDNS, UPnP, SMTP, IGMP, DHCP, DDNS, SSL v2/v3, IEEE 802.1X, SNMP v2/v3
SD Slot		Supported (MicroSD) ※ Micro SD Card not included (Recommend Class 4 and higher for HD recordings)

Electrical Characteristics

Power Source	DC 12V, AC24V / PoE IEEE802.3af (Class 0)
Power Consumption	DC12V and AC24V : 1.5A PoE : 800mA
Video Output	1 Vp-p, 75Ω, Composite
Audio Input	MICin, 0.178Vp-p, 10K Ω
Audio Output	Lineout, 2.26Vp-p, 10K Ω
D/I	Max 50mA@5VDC, TTL level 1.5V threshold
D/O	Max 50mA@24VDC On-state resistance: 50 Ω (max continuous)

Environment Condition

Operating Temperature	DC12V and AC24V : -20˚C ~ 50˚C (-4˚F ~ 122˚F) PoE : 0˚C ~ 45˚C (32˚F ~ 113˚F) Motor Spin: 10˚C ~ 40˚C (50˚F ~ 104˚F)
Operating Humidity	Up to 85% RH

Mechanical Condition

Material	Aluminum Die Casting
Color	Ivory
Dimension	Housing : 154.4(Ø) x 130 (H) mm Dome: 100(Φ) mm
Weight (Approx.)	1.2kg
PAN/Tilt Lifespan	Approx. 5,000 counts each

APPENDIX (B): POWER OVER ETHERNET

The Power over Ethernet (PoE) is designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard. IEEE 802.3af allows for two power options for Category 5 cables.
The IEEE 802.3af-2003 standard allows up to 15.4 W power to device. However, 12.95W is the maximum available power, as some power gets lost in the cable.
PoE has advantages over conventional power in such places where AC powers cannot be reached or expensive to wire.

Note: For proper activation of 12V PoE, the Category 5 cable must be shorter than 140m and conform the PoE standard.

PoE compatibility

With non-Power Sourcing Equipment (PSE)
When it is connected with non PSE, the power adaptor should be connected.

With power adaptor
Connecting both PSE and power adaptor does not do any harm to the product, but power adaptor will be the only power source for the device as it has priority over PSE. In this case, disconnecting power adaptor while it is operating will cause the device to reboot. And PoE will be the power source for the device after the reboot.

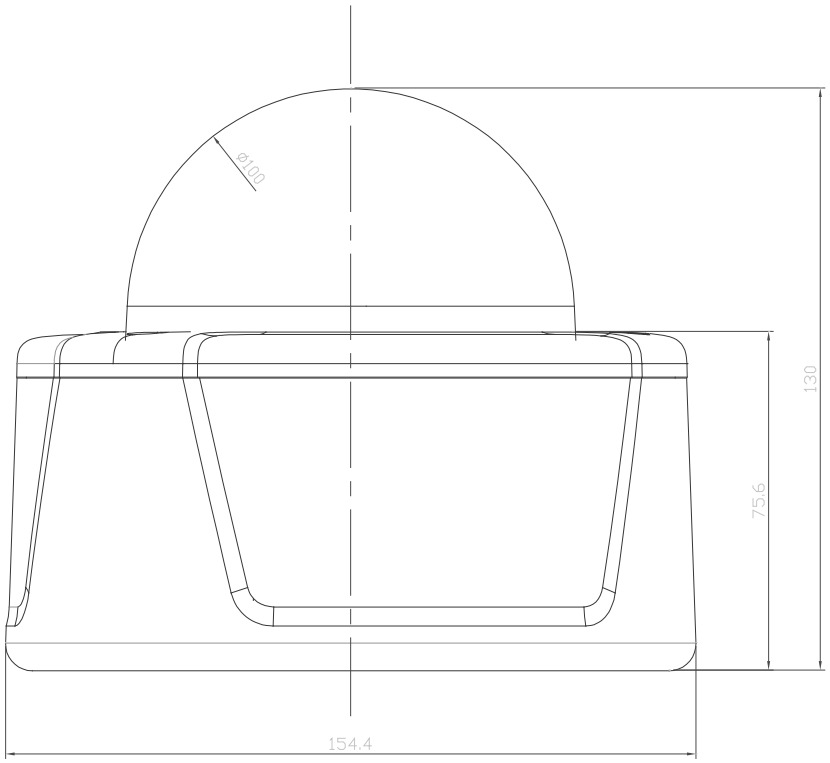
Power classification

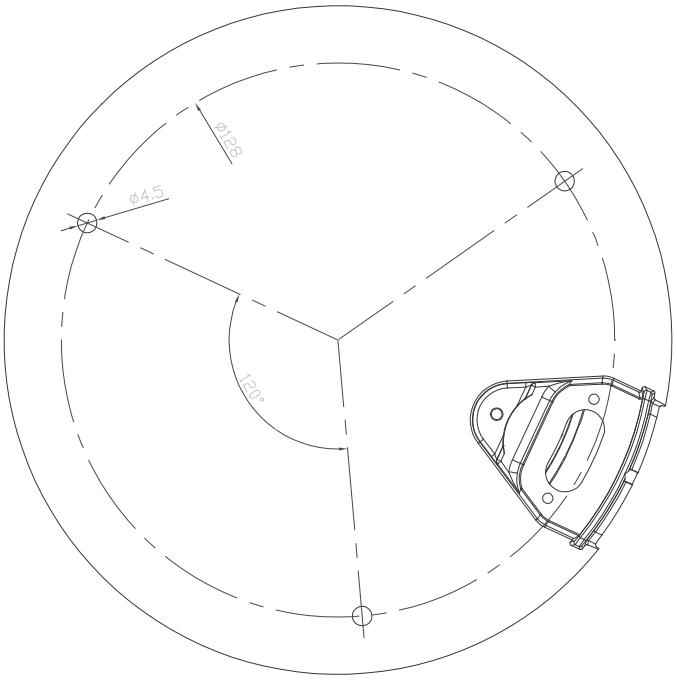
The PoE Power Class supported by the IP device is Class 0.

Class	Usage	Minimum Power Levels Output at the PSE	Maximum Power Levels at the Powered Device
0	Default	15.4W	0.44 to 12.95W

Unlike the other way, disconnecting PSE or PoE doesn't reboot the device as long as a power adaptor is connected.

APPENDIX (C): DIMENSIONS





(Unit: mm)

APPENDIX (D): HEXADECIMAL-DECIMAL CONVERSION TABLE

Refer to the following table when you convert the MAC address of your device to IP address.

Hex	Dec
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0A	10
0B	11
0C	12
0D	13
0E	14
0F	15
10	16
11	17
12	18
13	19
14	20
15	21
16	22
17	23
18	24
19	25
1A	26
1B	27
1C	28
1D	29
1E	30
1F	31
20	32
21	33
22	34
23	35
24	36

Hex	Dec
25	37
26	38
27	39
28	40
29	41
2A	42
2B	43
2C	44
2D	45
2E	46
2F	47
30	48
31	49
32	50
33	51
34	52
35	53
36	54
37	55
38	56
39	57
3A	58
3B	59
3C	60
3D	61
3E	62
3F	63
40	64
41	65
42	66
43	67
44	68
45	69
46	70
47	71
48	72
49	73

Hex	Dec
4A	74
4B	75
4C	76
4D	77
4E	78
4F	79
50	80
51	81
52	82
53	83
54	84
55	85
56	86
57	87
58	88
59	89
5A	90
5B	91
5C	92
5D	93
5E	94
5F	95
60	96
61	97
62	98
63	99
64	100
65	101
66	102
67	103
68	104
69	105
6A	106
6B	107
6C	108
6D	109
6E	110

Hex	Dec
6F	111
70	112
71	113
72	114
73	115
74	116
75	117
76	118
77	119
78	120
79	121
7A	122
7B	123
7C	124
7D	125
7E	126
7F	127
80	128
81	129
82	130
83	131
84	132
85	133
86	134
87	135
88	136
89	137
8A	138
8B	139
8C	140
8D	141
8E	142
8F	143
90	144
91	145
92	146
93	147

Hex	Dec
94	148
95	149
96	150
97	151
98	152
99	153
9A	154
9B	155
9C	156
9D	157
9E	158
9F	159
A0	160
A1	161
A2	162
A3	163
A4	164
A5	165
A6	166
A7	167
A8	168
A9	169
AA	170
AB	171
AC	172
AD	173
AE	174
AF	175
B0	176
B1	177
B2	178
B3	179
B4	180
B5	181
B6	182
B7	183
B8	184

Hex	Dec
B9	185
BA	186
BB	187
BC	188
BD	189
BE	190
BF	191
C0	192
C1	193
C2	194
C3	195
C4	196
C5	197
C6	198
C7	199
C8	200
C9	201
CA	202
CB	203
CC	204
CD	205
CE	206
CF	207
D0	208
D1	209
D2	210
D3	211
D4	212
D5	213
D6	214
D7	215
D8	216
D9	217
DA	218
DB	219
DC	220
DD	221

Hex	Dec
DE	222
DF	223
E0	224
E1	225
E2	226
E3	227
E4	228
E5	229
E6	230
E7	231
E8	232
E9	233
EA	234
EB	235
EC	236
ED	237
EE	238
EF	239
F0	240
F1	241
F2	242
F3	243
F4	244
F5	245
F6	246
F7	247
F8	248
F9	249
FA	250
FB	251
FC	252
FD	253
FE	254
FF	255

REVISION HISTORY

MAN#	DATE(M/D/Y)	Comments
01A.00	09/25/2012	First release version
01A.01	10/05/2012	Operation Temp. confirmed